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ABSTRACT

The Bender Gestalt protocols of 134 rural and 140 children (6-18 years old) found to have IQ scores in the slow learner range (IQ 70-84) were compared. The Bender Gestalt Test, used in psychoeducational evaluation to determine eligibility for special education placement, was administered to determine Ss' level of visual motor skills. Rural slow learners performed significantly below their mental ages more frequently than urban slow learners. Rural and urban slow learners performed developmentally below chronological ages (CA), but similar to mental ages (MA) until CA 10 years (MA 8 years). At this point urban slow learners appeared similar to MA expectations, but a significant number of rural slow learners performed below expectations. After CA 14 years (MA 11 years) the differences between the urban and rural groups, however, were not significant. (Tables with statistical data are appended.) (Author/SBH)

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Visual-Motor Abilities of Slow Learners

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Abstract

The Bender-Gestalt protocols of rural and urban Slow Learners (IQ 70 to 84) are compared. Rural Slow Learners performed significantly below their mental ages more frequently than urban Slow Learners. Rural and urban Slow Learners performed developmentally below chronological ages (CA), but similar to mental ages (MA) until CA 10 (MA 8-0). At this point urban Slow Learner appeared similar to MA expectations, but a significant number of rural Slow Learners performed below expectations. After CA 14 (MA 11-0) the differences between the urban and rural groups, however, were not significant.

Visual-Motor Abilities of Slow Learners

A psychoeducational evaluation of children to determine eligibility for placement in special education classes often includes the administration of the Bender Gestalt Test. Koppitz (1964) recommended using the Developmental Bender Scoring System for children age five through ten years regardless of IQ and for retarded children with a mental age of five through ten years regardless of their chronological age. A discrepancy between the mental age obtained on an individual intelligence test such as the Wechsler Intelligence Scale for Children (WISC-R) or Stanford-Binet and the Bender is often associated with neurological and/or emotional involvement. If the developmental age score on the Bender is higher than the mental age, "pseudoretardation" is suggested (Stellern, Vasa, & Little, 1976). Pseudoretardation refers to the misidentification of a child as retarded, usually the result of using a culturally biased evaluation measure. The suspicion that nationally normed tests may not result in a true reflection of the level of learning potential of a child in a given regional setting which significantly differs on sociocultural factors has been confirmed by recent studies (Oakland, 1977; Mercer & Lewis, 1976).

The accepted definition of mental retardation now used by most states is that proposed by the AAMD (1974), which defines as two standard deviations below the mean on an individualized intelligence test and significantly reduced adaptive behavior as mild retardation (or EMR). Service to a large group of children previously served by special education (those between

one and two standard deviations below the mean) is now in question. These children are usually referred to as Slow Learners. While some states offer separate classes for Slow Learners, possible placement of these children in programs with learning disabled and emotionally disturbed students has also been suggested (Hallahan & Kauffman, 1977). Characteristics of Slow Learners, some of which are also frequently used to characterize learning disabled and emotionally disturbed children, include the inability to attend to a task for long periods of time, low academic achievement, poor verbal and communication s[illegible]s, a use of concrete vocabulary, difficulty in generalizing concepts and transferring concepts to a new task, and a need for a lot of repetition or practice. Characteristics which are usually limited to describing the Slow Learner include the adequate organization of materials, the use of short and simple sentences, the ability to copy from the board, good handwriting, lack of curiosity and creativity, and limited leadership potential. The purpose of the present study is to examine the visual-motor abilities of rural and urban Slow Learners in a Southern state to determine what developmental patterns may exist between the obtained IQ score and the Bender. The Bender scores of Slow Learners are compared to the expected scores for both chronological age (CA) and mental age (MA).

Method

Subjects

Of 1,600 children referred during 1975-1976 for evaluation by four

university-based teams serving four Central Louisiana rural parishes and one urban parish, 134 rural children and 140 urban children between the age of 6 and 18 were found to have IQ scores in the Slow Learner range (IQ 70 to 84). Both groups contained twice as many males as females. The racial composition of the urban group was about equal; however, the rural group had a 2 to 1 black-white ratio.

Procedure

The Bender for each subject was scored by the psychologist on each team according to the Koppitz Developmental Bender Scoring System (1964) and a developmental age score was recorded. The MA for each student was computed from the WISC-R Full Scale IQ using the standard MA/100 X 100 formula. Each subject was rated as to whether the Bender developmental age score was more than one standard deviation below his mental age, equal to, or above his mental age. A χ^2 (Chi Square) test for two independent samples (Siegel, 1956) was computed for the data. Since the age range was so broad, an analysis of CA levels was made to ascertain what developmental patterns, if any, were present. The Fisher Exact Probability Test (Siegel, 1956) was used for this analysis when $N < 40$, otherwise χ^2 was used.

Results and Discussion

The χ^2 test to observe the relationship between the frequency of urban and rural Slow Learners obtaining developmental age scores below, equal, or above their mental age is shown in Table 1. The obtained χ^2 value is 6.86 which is significant at the .05 level. Inspection of cell frequencies in-

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Insert Table 1 about here

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dicates that 75% of the students have Bender scores within the range expected for their MA, 18.6% are below the expected MA, and 6.5% are above MA for the total Slow Learner population. Only a total of 18 students out of 274 would fit the description of "pseudoretarded" based on a discrepancy of a higher Bender score. However, almost one-fifth of the Slow Learner population have significantly poorer Bender scores than expected for the MA which is often associated with neurological and/or emotional involvement. Children with average IQ's and significantly poorer Bender scores are frequently classified as learning disabled. Considering the characteristics of Slow Learners, especially those describing these children as having good handwriting and being able to copy from the board, the rural Slow Learners are more similar to learning disabled children than a general population of Slow Learners.

An analysis of the developmental patterns in the scores was also made. CA groupings were made on a yearly basis and the percentage of students scoring below CA expectancy observed.

Insert Table 2 about here

If based on CA alone, both urban and rural students would be significantly below expectancy. No percentages were given for students over CA of 10 as the Koppitz norms do not go above this age. Use of the MA expectancy, however, resulted in a totally different pattern.

Insert Table 3 about here

Up to a CA of 10 (MA of 8-0), no significant differences appear between rural and urban groups. Developmentally, the Bender score is similar to that expected for the MA. Using the MA rather than the CA appears, therefore, more diagnostically appropriate for Slow Learners. After a CA of 10, however, a different pattern emerges. The major source of variability between urban and rural population appears to be occurring for the CA 11 to 14 (MA 8-4 to 10-5) range. The urban group continues the developmental pattern of similarity to MA while the rural group appears to reach a plateau until CA 14, when again the trend is toward visual-motor maturity. Whereas previously no apparent differences between urban and rural children appeared, the young adolescent rural student appears to be delayed in visual-motor development. Developmental delay in other areas, such as the emergence of the ability to perform formal operations has been noted elsewhere for rural adolescents (Uzgiris, 1970). Most studies on visual-motor performance in the past (Baker, 1976; Gilmore, Chandy, and Anderson, 1975; Larsen, 1976; Marmorale and Brown, 1975; Zuelzer, 1976) have been directed at the younger child and the implications associated with beginning reading skills. Educational implications here are more directed toward the middle school and high school than the primary or elementary grades. Perceptual training usually geared to younger children may not meet the needs or be appropriate for older students.

Vocational training programs as well as academic programs could be affected. Further investigation involving other ability groupings such as superior and average students appears warranted and the possible relationship to academic or vocational success for the rural student investigated.

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Table 1

Frequency of Bender Scores Below MA, Equal To MA, or Above MA for Rural and Urban Slow Learners

Bender Score	Urban	Rural	Total
< MA	19	32	51
= MA	114	91	205
> MA	7	11	18
Total	140	134	274

$\underline{X}^2 = 6.85$, $\underline{p} < .05$

Table 2

Percentage of Scores Below CA Expectancy by Age and Location

Age	Urban	Rural
6	86%	50%
7	71%	62%
8	67%	71%
9	65%	63%
10	50%	46%

Table 3

Frequency of Scores Below MA Expectancy by Age and Location

CA	MA	Urban (N)	Rural (N)
6	5-2	1(7)	0(10)
7	5-10	0(21)	2(13)
8	6-8	4(16)	3(17)
9	7-5	3(23)	1(16)
10	8-0	3(14)	3(13)
*11-14	8-4 to 10-5	4(45)	15(50)
14-18	Above 11-0	4(14)	8(15)

*$\underline{X}^2 = 5.34$, $\underline{p} < .05$